

### **REMARKS**

Claims 1, 3 and 7-50 were pending in the present application. Claim 1 has been amended and claims 7-12 have been canceled, without prejudice. Claims 11-12 and 19-50 were previously withdrawn from consideration. Claims 1, 3, and 13-50 are currently pending. Support for the amendments can be found throughout the specification and in the original claims as filed. No new matter has been added.

Amendment or cancellation of claims should not be construed as an acquiescence, narrowing, or surrender of any subject matter. The amendments are being made not only to point out with particularity and to claim the present invention, but also to expedite prosecution of the present application. Applicants reserve the right to prosecute the originally filed claims further, or similar ones, in the instant or subsequently filed patent applications.

#### **Rejection under 35 U.S.C. § 112, First Paragraph**

Claims 1, 3, and 8-18 remain rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, the Examiner states that “[t]he instant claims encompass an MHC class II compound comprising any spaceholder molecule of any sequence that binds with intermediate or low affinity within the peptide binding groove and hinders the binding of any other peptide within the peptide binding groove, and not necessarily a CLIP peptide or substitution variant thereof capable of binding in the peptide binding groove, and including the spaceholder molecule that has, *i.e.*, comprises, the poly-Ala peptide recited in instant claim 10. There is insufficient disclosure in the specification on such a compound.”

Applicants respectfully traverse the rejection. However, solely in order to expedite prosecution and in no way conceding to the Examiner’s rejection, Applicants have amended the claims to state “a spaceholder molecule, wherein said spaceholder molecule is molecule is selected from the group consisting of PVSKMRMATPLLMQA (SEQ ID NO:1); AAMAAAAAAMAA (SEQ ID NO:2); AAMAAAAAAMAA (SEQ ID NO:3); AAFAAAAAAAMAA (SEQ ID NO:4); ASMSAASAASMAA (SEQ ID NO:5); and the consensus sequence AAXAAAAAAXAA (SEQ ID NO: 36).” Applicants respectfully submit that there is sufficient disclosure in the specification to support the claims as amended, and respectfully request that the Examiner withdraw the rejection.

**Objections To Priority**

The Examiner has deemed the filing date of the instant claims 8 and 9 to be July 11, 2003, which is the filing date of the instant application, because the parent provisional applications allegedly do not support the claimed recitations of “wherein said peptide is about 12-15 amino acid residues” and “wherein said peptide is about 13 amino acid residues.”

Applicants respectfully traverse this objection. However, solely in order to expedite prosecution and in no way conceding to the Examiner’s objection, Applicants have canceled claims 8 and 9, without prejudice, rendering the Examiner’s objection moot.

**Rejections under 35 U.S.C. § 103(a)**

Claims 1, 3, 7-9, 14 and 16-18 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Zhong *et al.* (J. Exp. Med. 1996, 184: 2061-2066, of record) in view of Kozono *et al.* (Nature 1994, 369: 151-154, of record) and Natarajan *et al.* (J. Immunol. 1999, 162:4030-4036). Specifically, the Examiner states that “[i]t would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have produced the construct taught by Zhong *et al.*, but with a processable linker such as taught by Kozono *et al.* for their class II MHC/peptide molecule and optionally, to have made another such molecule comprising a low affinity peptide such as taught by Natarajan *et al.* instead of the CLIP peptide taught by Zhong *et al.*, and each molecule including a detectable label” (see Final Office Action, beginning at page 4).

Applicants respectfully traverse the rejection. However, solely in order to expedite prosecution and in no way conceding to the Examiner’s rejection, Applicants have amended claim 1 to state “a spaceholder molecule, wherein said spaceholder molecule is molecule is selected from the group consisting of PVSKMRMATPLLMQA (SEQ ID NO:1); AAMAAAAAAAMAA (SEQ ID NO:2); AAMAAAAAAAMAA (SEQ ID NO:3); AAFAAAAAAAAMAA (SEQ ID NO:4); ASMSAASAASMAA (SEQ ID NO:5); and the consensus sequence AAXAAAAAAAXAA (SEQ ID NO: 36).” Applicants respectfully submit that neither, Zhong *et al.*, Kozono *et al.*, nor Natarajan *et al.*, either alone or in combination, teach or suggest each and every element of the instant claims, at least, because these references fail to disclose the spaceholder molecules of the amended claims. Applicants, therefore, respectfully request that the Examiner withdraw the rejection.

The Examiner has also rejected claims 10-12 under 35 U.S.C. § 103(a) as being unpatentable over Zhong *et al.* (J. Exp. Med. 1996, 184: 2061-2066, of record) in view of Kozono *et al.* (Nature 1994, 369: 151-154, of record) and Natarajan *et al.* (J. Immunol. 1999, 162:4030-4036) as applied to claims 1, 3, 7-9, 14 and 16-18 above, and further in view of Malcherek *et al.* (J. Exp. Med. 1995, 181: 527-436, IDS reference) and DiBrino *et al.* (J. Biol. Chem. 1994, 269(51): 32426-32434, of record). Specifically, the Examiner states that “[i]t would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have extended the amino terminus of the CLIP 105-117 peptide out sequentially (as well as the carboxy terminus), including making a peptide with the sequence PVSKMRMATPLLQA (amino acid residues 103-117), in order to determine if binding fully commensurate with the CLIP 97-120 peptide could be obtained, and to have made a construct of the structure taught by the combined references, but using a human HLA class II molecule such as HLA-DR17 taught by Malcherek *et al.* that binds the CLIP 105-117 and the CLIP 97-120 peptide, and the extended peptides such as CLIP 103-117.”

Applicants respectfully traverse the rejection. None of the references cited by the Examiner disclose the spaceholder molecules of the claims, as amended herein. Furthermore, one skilled in the art at the time of invention would have had no motivation to modify the sequences that are disclosed in Malcherek *et al.* and DiBrino *et al.* so as to generate the spaceholder sequences of the amended claims. Therefore, neither Zhong *et al.*, Kozono *et al.*, Natarajan *et al.*, Malcherek *et al.* nor DiBrino *et al.*, either alone or in combination, teach or suggest each and every element of the instant claims, at least, because these references fail to disclose the spaceholder molecules of the amended claims. Applicants therefore respectfully request that the Examiner withdraw the rejection.

The Examiner has also rejected claims 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Zhong *et al.* (J. Exp. Med. 1996, 184: 2061-2066, of record) in view of Kozono *et al.* (Nature 1994, 369: 151-154, of record) and Natarajan *et al.* (J. Immunol. 1999, 162:4030-4036) as applied to claims 1, 3, 7-9, 14 and 16-18 above, and further in view of Crawford *et al.* (Immunity. 1998, 8: 675-682, IDS reference). Specifically, the Examiner states that “[i]t would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have multimerized the complexes taught by the combined references, plus or minus the leucine zipper peptides, using the methodology of Crawford *et al.*”

Applicants respectfully traverse the rejection. As described above, none of the references cited by the Examiner, either alone or in combination, teach or suggest each and every element of the instant claims, at least, because these references fail to disclose the spaceholder molecules of the amended claims. Applicants therefore respectfully request that the Examiner withdraw the rejection.

### **CONCLUSION**

In view of the foregoing remarks, Applicants submit that the pending claims are in condition for allowance. Early and favorable reconsideration is respectfully solicited. The Examiner may address any questions raised by this submission to the undersigned at (617) 832-1000. If any fees are due, the Commissioner is hereby authorized to credit any overpayment or charge any deficiencies to Deposit Account No. **Deposit Account No. 06-1448, Reference No. DFS-044.01.**

Respectfully submitted,  
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